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ABSTRACT

The summary of the research and developmental activities in agricultural education for the North Atlantic Region consists of research abstracts of 23 studies completed during 1973-74 and a listing of 23 studies in progress. Each research abstract presents a one-page description of the project's purpose, method, and findings. Studies are concerned with various aspects of agricultural education: dealings with the educationally disadvantaged, teacher education, teaching methods, curriculum research, program development, educational relevance, and other educational needs. (BP)

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SUMMARY OF RESEARCH

AND

DEVELOPMENTAL ACTIVITIES

IN

AGRICULTURAL EDUCATION

NORTH ATLANTIC REGION

1973 - 74

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THE DEPARTMENT OF
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GRADUATE SCHOOL OF EDUCATION
RUTGERS UNIVERSITY
THE STATE UNIVERSITY OF NEW JERSEY

JUL 18 1975

Summary of Research and Developmental Acivities

North Atlantic Region

1973-74

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BARRETT, LEVERNE A. Effectiveness of a Sixth Grade Camping Experience in Developing Student Attitudes Toward the Environment. Paper, M.Ed., 1974. 76 p. Library, The Pennsylvania State University, University Park, Pennsylvania.

BERKEY, ARTHUR L. The Relevance of Secondary Occupational Education in Agriculture to Occupational Patterns and Images: Phase II. Staff Study, 1974, 158 p. College of Agriculture and Life Sciences At Cornell University, Ithaca, N.Y.

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CONTEH, KAIMASA MOILAI. A Synthesis Of Procedures And Techniques For Identifying Curriculum Content For Occupational Education. Thesis M.S., 1974 114 p. Department of Agricultural and Occupational Education New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, N.Y.

CURTIS, SAMUEL M. Education in Agriculture for the Educationally Disadvantaged. Staff study, 1974. 50 p. RCU Project No. 20-3002. Department of Agricultural Education Report to Pa. Dept. of Education, Harrisburg, Pennsylvania.

ELY, RONDA HARGUS. Performance-Based Professional Education Inservice Needs of Secondary Level Occupational Teachers in New York State. Thesis, Ph.D., 1973, Cornell University, 275 p. Library, Cornell University, Ithaca, N.Y.

GLOTFELTY, THOMAS A. How Advanced Agricultural Mechanics Competencies Are Obtained by Vocational Agriculture Teachers in West Virginia. Master's Thesis, 1975, West Virginia University, Morgantown, West Virginia.

GRANT, LEE P. Effects of Two Agricultural Inservice Teacher Education Instructional Methods and Concurrent Teacher Activities on Teacher Achievement in and Attitudes toward Electric Motors. Thesis, Ph.D., 1974. 96 p. Library, The Pennsylvania State University, University Park, Pennsylvania.

GRAY, JOHNNY, JR. A Comparison of Relative Effectiveness in Three Methods of Teaching Hunter Safety. Paper, M.Ed., 1974. 87 p. Library, The Pennsylvania State University, University Park, Pennsylvania.

LINDLEY, WILLIAM I. Vocational Educators' Attitudes Toward Vocational Youth Organizations in New York State's Occupational Education Centers. 130 p. Thesis Ph.D., 1974, Cornell University, Ithaca, N.Y.

MANNEBACH, ALFRED J. A Survey of Employment Opportunities and Community Resources Having Implications for Programs of Vocational Agriculture in Connecticut: Phase I. Staff Study, 1974. Department of Higher, Technical, and Adult Education, University of Connecticut, Storrs, Connecticut.

MANNEBACH, ALFRED J., and ROGER W. LAWRENCE. The Development and Use of an Administrative Handbook for Regional Vocational Agriculture Centers in Connecticut. Staff Study, 1974. Department of Higher Technical, and Adult Education, University of Connecticut, Storrs, Connecticut.

McMILLAN, RICHARD C. Manpower Utilization and Development in Calhoun County as it Relates to Agriculture and Agriculturally Related Enterprises with Implications for Curriculum Development. Master's Thesis, 1974, West Virginia University, Morgantown, West Virginia.

METZGAR, GEORGE F. Competencies or Objectives for Students Placed on Cooperative Work Experience in Slaughtering and Meat Processing. Master's Thesis, 1974, West Virginia University, Morgantown, West Virginia.

PAUL, PRODEEP K. Attitudes and Performance of Students with Varying Academic Abilities in High School Agriculture Curricula in Pennsylvania. Thesis, Ph.D., 1974. 145 p. Library, The Pennsylvania State University, University Park, Pennsylvania.

PHIPPS, ROBERT F. Guidelines for Community Development in Quang Nam Province, South Viet-Nam. Paper, M.Ed., 1974. 55 p. Library, The Pennsylvania State University, University Park, Pennsylvania.

SAVILLE, JOHN K. Problems Associated with Incorporating Vocational Agriculture into the Area Vocational School. Master's Thesis, 1973, West Virginia University, Morgantown, West Virginia.

SEAMAN, ALAN M. Guidelines For Developing An Improved Program Of Agricultural Education and Extension in the Raiwind Area of Pakistan Based on an Analysis of the Nature and Extent of the Need in the Area. M.S. Thesis, 1974. Cornell University. 182 p. Agricultural and Occupational Education Division, Cornell University, Ithaca, N.Y.

VOUGHT, P. TIMOTHY. An Analysis of Occupational Titles and Competencies in Agricultural Machinery and Equipment Sales and Service Businesses in Somerset County. Paper, M.Ed., 1973. 79 p. Library, The Pennsylvania State University, University Park, Pennsylvania.

WENDT, FELIX SCHLUTER. A Strategy for the Development of Pre-Tertiary Level Agricultural Education in Western Samoa. Dissertation, Ph.D., 1974, Cornell University. 221 p. Library, Cornell University, Ithaca, N.Y.

WEST, WILLIAM C. The Need for Agricultural Mechanics Workshops as Perceived by West Virginia Vocational Agriculture Teachers. Master's Thesis, 1975, West Virginia University, Morgantown, West Virginia.

RESEARCH ABSTRACTS

1973-74

ADAMS, WILLIE GRAY. Influence of Career Education on Motivation and Aspiration of Middle School Age Educationally Disadvantaged Youth. Thesis, D.Ed., 1974. 117 p. Library, The Pennsylvania State University, University Park. Pennsylvania.

Purpose.--(1) To measure and compare the level of motivation, career maturity, aspiration and expectation of educationally disadvantaged and not disadvantaged middle school age male and female learners who were involved in curricula that were career oriented and non career oriented, (2) to relate attitudes of public school personnel to level of student motivation and (3) to relate level of motivation to level of career maturity. Major null hypotheses were that career oriented programs for educationally disadvantaged middle school age learners will not make a significant difference in the level of motivation, career maturity, aspiration and expectation of these learners and that attitudes of school personnel toward the disadvantaged are not related to the level of motivation of these students.

Method.--During the spring 1973, data were collected from 490 middle school age male and female educationally disadvantaged and not disadvantaged learners and 48 school administrators, teachers and guidance counselors in 12 schools located in Delaware, Pennsylvania and New Jersey. Six of these schools had career oriented programs and six schools had non career oriented curricula. Information was obtained from each middle school age learner on the Junior Index Motivation Scale; the Career Maturity Inventory and on an Interview Schedule. School personnel responded to a semantic differential scale to measure attitudes toward the disadvantaged.

Findings.--The level of motivation of the not disadvantaged middle school age male and female learners as measured on the Junior Index Motivation Scale was significantly higher than was the motivation level of the disadvantaged in both career oriented and non career oriented schools. The not disadvantaged students had a significantly higher mean score on the Career Maturity Inventory in both kind of school programs.

The aspiration of male not disadvantaged respondents was significantly higher than the aspiration of male disadvantaged students in career oriented programs. Interestingly, the level of aspiration of male disadvantaged respondents in non career oriented programs was significantly higher than the level of aspiration for not disadvantaged males in these same programs. Neither the educational category of the learner nor the type of curricula had a significant effect upon the level of expectation of middle school age males. The educational category not the type of program made a significant difference in the levels of aspiration and expectation of middle school age female respondents.

Attitudes of school personnel as measured on a semantic differential scale were not significantly related to middle school age learners' performance on the Junior Index Motivation measure.

Motivation of middle school age learners was significantly related to career maturity for learners involved in career oriented programs and for those not involved in career oriented programs. In addition, this relationship was significant for the disadvantaged and not disadvantaged learners.

BARRETT, LEVERNE A. Effectiveness of a Sixth Grade Camping Experience in Developing Student Attitudes Toward the Environment. Paper, M.Ed., 1974 76 p. Library, The Pennsylvania State University, University Park.Pennsylvania.

Purpose.--To determine the effectiveness of a one-week resident outdoor camping experience in changing environmental attitude of sixth graders in relation to four objectives: (1) to foster an appreciative and critical environmental awareness, (2) to increase the will and capacity to improve the environment, and (4) to help students become aware that their own decisions and actions affect the overall environment.

In addition, teacher's environmental attitude, students' previous outdoor lessons, camping experience, residence, I.Q. reading ability and sex were examined for relationships.

Method.--Eight sixth grade teachers, school camp staff, and their 195 learners from the Conrad Weiser School District, Robesonia, Pennsylvania attended the resident camp for one week. The learning process was centered around daily lessons that followed the National Park Service NEED PROGRAM. A 40-item Likert-type environmental attitude survey with four part scores was pilot tested with sixth grade students in the neighboring ELCO School District, revised, and then given as a pre-test and post-test in the Conrad Weiser teaching experiment.

Findings.--(1) A significant change in total environmental attitude was achieved as a result of the one week resident camp. (2) Sixth grade teachers' environmental attitudes had a significant positive correlation with the post-test mean attitude scores of their students. (3) Learners that had three or fewer previous outdoor lessons before attending camp and those that had between four and nine previous outdoor lessons had no significant difference. (4) There was no significant difference between learners that had previous camping experience and those that had no camping experience. (5) The place of residence, whether rural or small town, had no significant relationship to mean attitude scores. (6) Learner's I.Q.score had a significant positive correlation with environmental attitude achieved in camp. (7) Sex was a determining factor in attitude change. Girls scored significantly higher in environmental attitude than boys. (8) A learner's reading ability had a significant relationship to his environmental attitude score.

The resident environmental camp experience has been enthusiastically received by the school administration, student participants and parents.

BERKEY, ARTHUR L. The Relevance of Secondary Occupational Education in Agriculture to Occupational Patterns and Images: Phase II. Staff Study, 1974, 158 p. College of Agriculture and Life Sciences At Cornell University, Ithaca, N.Y.

Purpose.--Provide a basis for evaluation and improvement of secondary occupational education programs in agriculture.

Method.--New York secondary agricultural graduates in 1968 and 1972 and their employers, responded to mail questionnaires on first and second years after graduation. Data included occupational images of agriculture, occupational status, job satisfaction and advancement, future plans, and need for agricultural knowledges and abilities. Data analysis was by computer.

Findings.--One-half of graduates were employed, others were in school, military service, or unemployed. Two percent of 1968 graduates and eleven percent of 1970 graduates were unemployed. Three quarters of graduates in college had agriculture majors. Graduates used informal job seek methods. One-half of employed 1968 graduates and one-third of 1970 graduates were working in their area of training. Almost all graduates working outside their area of training were interested in their area if employment was available. Almost all jobs held were full-time with seven or more months tenure.

One-fourth of employed graduates were provided additional training by employers. Three-quarters of graduates had positive job satisfaction. Most dissatisfaction was with pay received and promotions available. Employers rated three-quarters of graduates as "well qualified" for their jobs. Employers rated sixty percent of graduates as having potential for salaried or management positions. Less than half of the agricultural knowledges and abilities were rated as needed in graduates' jobs. Positive job attitudes were rated high by both graduates and employers.

Occupational images held by graduates of farming and off-farm agriculturally related industry were generally positive.

Recommendations were for increased career guidance and teaching of job seek skills. Community surveys of job opportunities and placement services should be strengthened. Positive job attitudes and habits should be stressed. Follow-up of graduates should be continued and regularized as a basis for program evaluation.

BERKEY, ARTHUR L. Validation Of An Instrument To Measure Occupational Image In Agricultural Business And Industry. Staff Study, 1973, 158 p. College Of Agriculture and Life Sciences At Cornell University, Ithaca, N.Y.

Purpose.--To develop and validate an instrument to measure occupational image of agricultural business and industry as one input for worker recruitment and retention.

Method.--Twelve occupational aspect areas characteristic of all occupations were identified. Positive and negative statements representing each aspect area were developed to serve as a trial instrument. The population was non-seasonal full-time agricultural workers in New York in the areas of production, supplying, and processing/distribution; and students enrolled in agriculture classes. Workers within areas were stratified by professional, skilled, and unskilled employment levels. The trial instrument was administerd by mail to a sample of the population. Data was analysed by areas and employment levels. Correlations and factor analysis via computer were used to validate instruments.

Findings.--The sixteen instruments validated in the study varied by area and employment level. Recommendations were to use the validated instruments in identification of potential employees, and for employee selection and retention. Further research is needed to determine the relationship between the occupational image held of an area and willingness to accept or continue employment in that area.

CAMPBELL, RANDALL G. Knowledge and/or Attitudes of Milk Marketing of Pennsylvania Dairymen, Teachers of Agriculture and Dairy Cooperative Fieldmen. Thesis, D.Ed., 1974. 75 p. Library, The Pennsylvania State University. University Park. pPennsylvania.

Purpose.--(1) To survey the Pennsylvania dairy industry to obtain current information about procedures used for marketing milk in the Commonwealth; (2) to determine dairymen's level of milk marketing knowledge and its relationship to their size of operation and sales outlet; (3) to develop a teaching resource unit on milk marketing at the tenth grade level for reading ability; (4) to develop teaching aids, reference lists, and learning activities; (5) to determine attitudes about milk marketing held by dairy industry fieldmen, vocational agriculture teachers, and dairymen; and (6) to measure attitude change of those who studied the resource unit.

Method.--The dairy industry survey resulted in the development of an outline of problem areas that were used in preparing student and teacher manuals. This outline was also used to develop both the knowledge and attitude instruments used in the study. The problem areas were: (1) dairy production principles and consumer trends related to milk marketing; (2) producer interest in the processing and manufacture of milk; (3) dairy products; (4) federal agencies affecting the fluid milk industry; and (5) state and local agencies affecting the fluid milk industry.

Findings.--Two hundred thirty-seven dairy farmers in 20 randomly selected young farmer programs completed the knowledge test. They answered 53 percent of the questions correctly. The highest score was for problem area 2 (processing) and the lowest score was for problem area 1 (trends). There were 125 cooperative marketing farmers and 99 marketing to independent handlers. The farmers marketing cooperatively had significantly higher test scores in problem areas 1 (trends) and 4 (federal orders).

The group was divided into three sizes according to gross value of fluid milk sold. The group with the largest gross sales had significantly higher knowledge test scores than the lower two groups in total test scores and in scores for problem area 2 (processing).

Five young farmer groups enrolled in a milk marketing class returned 43 milk marketing attitude statement forms. Three inservice vocational agriculture teacher classes on milk marketing returned 30 milk marketing attitude statement forms. Thirty-one of the 50 dairy cooperative fieldmen working in Pennsylvania returned milk marketing attitude statement forms. The results showed fieldmen had different attitudes than dairy farmers in problem areas 1 (trends), 2 (processing), 4 (federal orders), and total test score. Vocational agriculture teachers had different attitude scores than dairymen in area 1 (trends) and total test score. The attitudes of cooperative fieldmen and vocational agriculture teachers did not differ in any of the areas or in total test score.

The teachers and farmers were tested after class instruction for attitude change. Significantly higher post-test attitude scores were found for the combined group of dairy farmers and vocational agriculture teachers for problem areas 1 (trends) and 4 (federal orders).

CONTEH, KAIMASA MOILAI. A synthesis of procedures and techniques for identifying curriculum content for occupational education. Thesis M.S., 1974. 114 p. Department of Agricultural and Occupational Education, New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, N.Y.

Purpose.--The study was designed to (1) make a synthesis of the procedures and techniques used in occupational analysis for identifying curriculum content for occupational education; (2) compare and contrast the two main approaches to occupational analysis, namely, the Job Title and the Functions-Tasks; (3) suggest and explain a system for planning curriculum and instruction in occupational education; (4) develop a structural framework of the analysis schedules to which the investigator will refer when planning and conducting studies in his home country; and (5) make recommendations that will improve the process of occupational analysis.

Method.--The investigator reviewed selected research studies, books, monographs and professional articles on the subjects of curriculum and/or instruction and occupational analysis to provide the context and data for the study.

Findings.--In all, seventeen procedures and seven techniques of acquiring occupational information, in the conduct of occupational analysis, were identified and explained. The Job Title and Functions-Tasks approaches were compared under major categories and contrasted. Seven systems for planning curriculum and instruction were selected and reviewed to serve as basis for the investigator's own system which comprised four phases: feasibility study, curriculum development, instructional planning and evaluation. Lastly, the investigator made ten recommendations.

CURTIS, SAMUEL M. Education in Agriculture for the Educationally Disadvantaged. Staff study, 1974. 50 p. RCU Project No. 20-3002. Department of Agricultural Education Report to Pa. Dept. of Education, Harrisburg. Pa.

Purpose.--The project was to (a) prepare and evaluate instructional materials specially designed for teaching entry level occupational skills in agriculture to disadvantaged youth, (b) improve teacher proficiency in instructing disadvantaged youth, (c) alert teachers and youth of entry level occupations in agriculture potentially available to the disadvantaged and (d) identify educationally disadvantaged youth who could benefit from competence in agricultural occupations.

Method.--Instructional materials in ornamental horticulture, agricultural mechanics, and agricultural production were developed and tested. Materials were written in task format at the sixth grade reading level. Effectiveness of the experimental materials was evaluated for disadvantaged youth by comparison with conventional material. Two teacher institutes were held to improve competency of 25 teachers in the project. Occupational information of entry level type jobs was disseminated to the teachers. Eighth graders in the 19 comprehensive high schools in the project were tested for agricultural interest in each of two years. Interest was analyzed on the basis of demographic factors and disadvantagement.

Findings.--The experimental instructional materials were superior to materials currently in use. The criterion measures were achievement and performance tests. In many of the comparisons the performance of the disadvantaged student was equal to that of students classified as average and above average. Analysis of variance and analysis of covariance were the statistical techniques applied to the data. Teacher attitude toward disadvantaged students became more positive on three of 12 subscales and in total score from the first to second project year. When tested during the third year, gains previously realized had stabilized.

Occupational information was provided teachers and guidance counselors. A manual, Agricultural Occupations: Entry Level Jobs, was printed and disseminated to project teachers. Agricultural interest of disadvantaged students entering ninth grade agriculture classes was not different from other agriculture students. Interest scores of all students who entered ninth grade agriculture classes was higher than of those students who indicated a desire to enroll but who never actually enrolled.

Four doctoral dissertations and three masters papers resulted from the project.

ELY, RONDA HARGUS. Performance-Based Professional Education Inservice Needs of Secondary Level Occupational Teachers in New York State. Thesis, Ph.D., 1973, Cornell University, 275 p. Library, Cornell University, Ithaca, N.Y.

Purpose.--The major purpose of this study was the identification of the professional education inservice needs of secondary level occupational teachers in New York State. A secondary purpose was the differentiation of inservice needs common and/or unique to service area occupational teacher groups. The current dearth of inservice needs information for employed occupational teachers is compounded by occupational teachers entering the profession with increasingly varied educational and occupational backgrounds. A move toward expanded opportunities for certification in New York has also produced an increasing number of occupational teachers whose professional competencies are relatively unknown to the teacher educators, supervisors, and administrators who have responsibility for developing inservice programs.

Method.--The 1972-73 Directory of New York State Vocational Education Personnel was used to identify the population which contained 1648 occupational teachers, 70 occupational supervisors, and 77 occupational schools. A sample of 677 occupational teachers was randomly selected then segregated into the following service area occupational teacher groups: agriculture teacher, business teacher, distributive education teacher, health teacher, home economics teacher, and trade and industrial teacher. From a list of participating teachers in each occupational school, one teacher was randomly selected and assigned to his/her immediate supervisor for evaluation purposes.

A survey instrument consisting of 422 performance-based professional education behavior statements was developed and subjected to a review by a panel of occupational education consultants. After field-testing and revision, the instrument was mailed to the sample of occupational teachers and supervisors for self-administration. Two follow-up letters were mailed with the final response being 80% from occupational teachers and 93% from occupational supervisors.

The one-way analysis of variance was utilized to ascertain differences between service area occupational teacher group responses on importance of identified behaviors, performance level, and inservice need. Occupational teachers and their supervisor's responses were correlated to ascertain level of agreement/disagreement between groups.

Findings.--The major findings include the following: (1) There is substantial overlap in the importance attached to professional competencies by occupational teachers in the six service area teacher groups. At the .05 level, there was no significant difference in the importance level attached to 281 of 355 professional performance behaviors tested. There was also no significant difference in the importance occupational teachers in the six service area teacher groups attached to 38 of 57 clusters of professional behaviors. (2) Occupational teachers in the six service area teacher groups perceive their performance at similar levels. (3) The level of occupational teacher-supervisor agreement fluctuates widely at the cluster level ranging from a correlation of +.77 to -.65; on some categories of behaviors there is significant positive agreement. (4) There is little difference in the perceived inservice needs of occupational teachers in New York State. (5) Occupational teachers perceive an urgent need for professional education inservice programs in specified areas (management, planning instruction, professional role and development) and little need for inservice programs in other areas (student occupational organizations.)

GLOTFELTY, THOMAS A. How Advanced Agricultural Mechanics Competencies Are Obtained by Vocational Agriculture Teachers in West Virginia. Master's Thesis, 1975. West Virginia University, Morgantown, West Virginia.

Purpose.--A survey instrument was compiled to determine skills possessed by Vo-Ag teachers in farm shop, farm machinery and power, farm structures (including electrification and concrete and masonry) and soil and water conservation.

Methods.--Included in the survey was a general statement concerning adjustment, maintenance and repair of farm shop equipment. The listing included a few basic skills and progressed to a number of hightly technical skills in each of the designated areas. The respondent was asked his own proficiency in each skill, where he felt the major portion of his training was acquired, if there was a need for additional training and at what level the skill should be taught. A cover sheet asked for information concerning teaching experience in vocational agriculture and agricultural mechanics, type of program, instructional responsibilities in agricultural mechanics and number of students at each level of vocational agriculture. One hundred survey instruments were mailed to the teachers of vocational agriculture in West Virginia. Seventy-three of the responses were used to provide the information in the study.

Findings.--It was determined that a desire for additional training was felt by all the teachers surveyed in every listed instructional area. Teachers felt they possessed better than average proficiency in all areas except farm machinery and power. When the desire for additional training was considered, however, this area did not enjoy a greater expressed need.

The method listed most often in competency development was on-job experience. Organized instruction in the form of high school, college and in-service training caused a marked improvement in the level of perceived proficiency. The more experienced teacher is taking greater advantage of in-service training.

Recommendations are made to make in-service training more available, possibly to the point of making such training required of the teacher and part of the summer professional improvement programs. Another recommendation was made to establish an organization of specialists that would be available to teachers in various areas of the state to aid in the more technical areas of agricultural mechanics. Emphasis is made on prompt action to improve instruction in agricultural mechanics.

GRANT, LEE P. Effects of Two Agricultural Inservice Teacher Education Instructional Methods and Concurrent Teacher Activities on Teacher Achievement in and Attitudes toward Electric Motors. Thesis, Ph.D., 1974. 96p. Library, The Pennsylvania State University, University Park. Pennsylvania.

Purpose.--The purposes were: (1) to determine the relative influence of two inservice teacher education class methods of instruction and of concurrent teacher activity on teacher achievement and attitude, and (2) to correlate teacher achievement and attitude with teacher background profile including teacher age, education completed, years of teaching experience, subject self rating in the field of mechanics, subjective self rating in the area of electric motors, experience in mechanics, experience in electric motors, and intent to teach electric motors.

Method.--Data were obtained from 69 teachers in four off campus inservice electric motors classes offered from the Department of Agricultural Education, The Pennsylvania State University during Winter and Spring terms of 1973. Control data were collected from teachers enrolled in two small gasoline engine classes who had not attended any recent electric motors classes. The pretest-posttest instruments used were: (1) teacher achievement test consisting of twenty-five multiple choice questions pertaining to the subject of electric motors, and (2) attitude inventory of the semantic differential type consisting of five electric motor concepts each with 10 bipolar adjectives.

The inservice classes for teachers were scheduled in the form of five, three-hour sessions meeting one night per week. Demonstration and hands-on experience methods on instruction were used. Teacher activity differed according to whether or not the teacher taught a similar unit to high school students while the teacher was enrolled in the inservice class.

Findings.--Participation in the inservice electric motors classes improved teacher achievement over no participation at the .001 level of significance by analysis of variance. The type of instructional method or concurrent teacher activity had no significant effect on either teacher achievement in the subject studied or teacher attitude towared five electirc motor concepts as tested by analysis of covariance. There were no correlations between teacher background profile and teacher achievement or attitudes.

The results of the study do not support the hypotheses that method of instruction or concurrent teacher activity enhances or hinders teacher achievement or attitudes. The results do support the belief that inservice education helps to fill the void that exists in teacher preparation and retraining.

Similar investigations using larger numbers of inservice classes and more pronounced differences between the instructional procedures and concurrent activities are recommended.

GRAY,JOHNNY, JR. A Comparison of Relative Effectiveness in Three Methods of Teaching Hunter Safety. Paper, M.Ed., 1974. 87 p. Library, The Pennsylvania State University, University Park.

Purpose.--The study was designed to determine the relative effectiveness of three methods of teaching hunter safety involving a College of Agriculture correspondence course (Hunter Safety 201) when evaluated by a knowledge test and attitude scores on fifteen safety concepts.

Method.--The three methods (combinations of teaching materials and procedures) used in this study were:

1. Correspondence course plus class discussion and related teaching-learning activities.
2. Correspondence course plus class discussion.
3. Correspondence course alone.

The schools and teachers by methods of instruction were:

West Perry H.S.
Samuel R. Wagner - Correspondence course plus class discussion and related teaching-learning activities
Oley Valley H.S.
Carl W. Blank - Correspondence course plus class discussion
Troy H.S.
Samuel T. Davey - Correspondence course plus class discussion
Canton Area H.S
Wayne A. Seely - Correspondence course alone

Findings.--A 75-question knowledge examination furnished with the correspondence course was used to test the first null hypothesis for teaching method formulated for the study. Result was that all three methods employed were equally effective in terms of knowledge acquired. Posttest scores were higher in all four schools. Mean posttest scores by methods were not significantly different.

It was found that all three methods of learning were effective in changing attitudes of students on some of the fifteen concepts. The correspondence course plus class discussion and related teaching-learning activities and the correspondence course alone each produced significant positive changes in average student score on three attitude concepts. The attitude concepts helped by the two methods were:

Method	Concepts
Correspondence course plus class discussion and related teaching-learning activities (West Perry H.S.)	Passing unloaded gun over fence Bright colored clothing Clear barrel
Correspondence course alone (Canton H.S.)	Bright colored clothing Firearm registration Safety zone

It is recognized that these effects may have been influenced by teacher and school environment since only one method was used in each school. Covariance analysis controlled for pre-test individual student differences.

LINDLEY, WILLIAM I. Vocational Educators' Attitudes Toward Vocational Youth Organizations in New York State's Occupational Education Centers. 130 p. Thesis Ph.D., 1974, Cornell University, Ithaca, N.Y.

Purpose.--The major purposes of this study were 1) to provide an analysis of teachers and occupational directors attitudes toward vocational youth organizations in the area occupational centers, 2) to identify problem areas and 3) to make recommendations that would enable youth organizations to function more effectively in New York State's occupational centers.

Method.--The population surveyed came from three distinct groups. A self-administered questionnaire was completed by occupational directors, current youth organization advisors and a random sample of non-advisor vocational teachers from New York State's occupational centers. Much of the data collected was descriptive in nature and means and percentages in certain categories were most useful in describing the attitudes and opinions of the respondents. The chi-square technique was employed where it was appropriate for determining levels of significance. All findings described as significant are at the 0.01 level.

Findings.--1) The responsibility for successful vocational youth organization activities in the occupational centers lies with the teachers and the administrative support they receive. 2) The teachers and occupational directors generally did not understand the aims and purposes of vocational youth organizations. 3) There is a need for increased inservice education in the areas of vocational youth organizations. This can also be interpreted as a need for including additional youth organization training in pre-service teacher education programs. 4) Vocational youth organization opportunities are not adequate in the occupational centers. Eighty-seven percent of the directors felt that a greater percentage of their students should be involved. 5) One vocational youth organization to serve all of the occupational specialty areas is not a satisfactory arrangement. 6) Leadership training cannot be effectively taught in the classroom setting. 7) Student enthusiasm is a problem, and additional research is needed to better define the profile of students attending vocational classes. There is a need to better understand the interests, abilities, and needs of students in occupational education.

MANNEBACH, ALFRED J. A Survey of Employment Opportunities and Community Resources Having Implications for Programs of Vocational Agriculture in Connecticut: Phase I. Staff Study, 1974. Department of Higher, Technical, and Adult Education, University of Connecticut, Storrs, Connecticut.

Purpose.--The purpose of the study was to (1) determine the employment opportunities for persons who have knowledge and skills in agricultural subjects and (2) to determine community resources available to programs of vocational agriculture in Connecticut. Phase I of the project was designed to compile a comprehensive review of literature, to determine the population and sample of farmers and non-farm agricultural firms, to develop a survey instrument and to develop the interviewing and survey research skills of teachers of vocational agriculture in Connecticut. Phase II of the project, conducted from July 1, 1974, to January 31, 1975, was designed to collect and analyze the data and to write the final report.

Overall, the study was designed to enumerate job possibilities, to determine where job openings in agriculture are located, to inform farmers and agri-businessmen of the program of vocational agriculture, and to determine what resources in the community could be tapped to enrich the program of vocational agriculture offered in Connecticut.

Method.--Phase I consisted of the organization, preparation and development of materials for the survey. Activities included determining the population, selecting the sample, designing the survey interview schedule and preparing the teachers of vocational agriculture to interview farmers and non-farm agricultural businessmen.

Finding.--Outcomes of Phase I included a Summary Review of Literature related to farm and non-farm agricultural employment in agriculture, regional listings of farms and non-farm agricultural firms, an interview schedule, an interview manual of methods and procedures to be followed, introductory letters, a summary of interview form, a brochure describing the program of vocational agriculture, and teachers of agriculture who were prepared to collect data through personal interviews. Objective data regarding employment opportunities and community resources will be made available at the end of Phase II of the study.

MANNEBACH, ALFRED J., and ROGER W. LAWRENCE. The Development and Use of an Administrative Handbook for Regional Vocational Agriculture Centers in Connecticut. Staff Study, 1974. Department of Higher, Technical, and Adult Education, University of Connecticut, Storrs, Connecticut.

Purpose.--The primary purpose of the project was to develop an Administrative Handbook for Vocational Agriculture Centers in Connecticut. Secondary purposes were to up-date policies and operational procedures for regional vocational agriculture centers and to improve and up-date the administrative effectiveness and long-range and annual planning abilities of the vocational agriculture teachers in Connecticut.

Method.--A two-day workshop and a one-half day follow-up meeting were developed in cooperation with the Connecticut State Department of Education, Division of Vocational Education, to improve and up-date the administrative techniques of Connecticut vocational agriculture department heads and their staffs. The participants received instruction and worked in small group sessions to up-date their knowledge and skill in policy making, program planning, personnel relationships and administrative techniques during the two-day workshop. Results of the instruction were incorporated into the final draft of the Administrative Handbook for Vocational Agriculture in Connecticut.

Approximately six weeks following the workshop, a one-half day follow-up meeting was conducted to provide the participants the opportunity to report on practices and procedures implemented, to share experiences, and to solve further problems and concerns needing attention. In addition, subcommittee meetings on Administrative Handbook development were held prior to and after the two-day workshop and after the follow-up meeting to prepare the final draft. The subcommittee was composed of teachers of vocational agriculture who were enrolled in a graduate course at The University of Connecticut..

Specific strategies for attaining the objectives included the presentation by the lecturer/specialists, small group work sessions, panel discussions, and daily evaluations of the program. A prepackaged set of materials was made available to each participant. Included were materials related to the administration and operation of regional vocational agriculture programs.

Findings.--The major outcome was the development and use of the Administrative Handbook. Teachers of vocational agriculture were also updated regarding other areas implied in the purpose of the study. The Administrative Handbook will be used during a trial period of one to two years, analyzed and reviewed by regional advisory committees, teachers and administrators, updated, and subsequently published as a policy document. The Administrative Handbook will provide guidelines and operational procedures to the managers of programs of vocational agriculture in Connecticut.

MCMILLAN, RICHARD C. Manpower Utilization and Development in Calhoun County as it Relates to Agriculture and Agriculturally Related Enterprises with Implications for Curriculum Development. Master's Thesis, 1974, West Virginia University, Morgantown, West Virginia.

Purpose.--This study was undertaken to enable the writer to upgrade the vocational agriculture curriculum in Calhoun County High School. To do this it was necessary to determine the educational needs of the farmer. The agricultural technological competencies necessary to perform those services needed by the farmer was determined. The kind and number of off-farm agricultural occupations presently within Calhoun County were identified as well as those anticipated within the next five years. To accomplish this it was necessary to survey those individuals engaged in farming as well as agri-business persons in the county. A questionnaire was developed to collect information necessary for the study.

Methods.--A random sample was taken consisting of 25 per cent of the people engaged in farming. The survey population was interviewed using the questionnaire designed for the persons engaged in farming. An attempt was made to obtain a 100 per cent sample of agri-business establishments. Each of those was asked to complete a questionnaire about his present employees and the number anticipated in five years.

Findings.--From these findings the manpower needs in agriculture were determined for Calhoun County. The off-farm agricultural jobs, while not large in number are expanding. Data indicate the need for agriculturally trained persons to fill anticipated openings. The opportunities for those who want to take a non-agricultural job off the farm and remain on the farm are always present in Calhoun County.

The topography of Calhoun County seems best suited for livestock production. The people responding to the questionnaire overwhelmingly suggested that beef production be emphasized in the vocational agriculture curriculum.

Using information gathered from agri-business men, part-time farmers, and full-time farmers within the county the vocational agriculture curriculum was revised to better meet the needs of these people as well as those enrolled in vocational agriculture classes.

METZGAR, GEORGE F. Competencies or Objectives for Students Placed on Cooperative Work Experience in Slaughtering and Meat Processing. Master's Thesis, 1974, West Virginia University, Morgantown, West Virginia.

Purpose.--The purpose of this study was (1) to determine the competencies or objectives used by students assigned to on-job-training in slaughtering and meat processing, (2) to construct a recommended course outline for the above students, and (3) to formulate a suggested guide for the evaluation of students assigned to cooperative work experience in slaughtering and meat processing.

Methods.--Data for this study were collected through questionnaires listing fifty-seven competencies which were mailed to every USDA approved and licensed slaughter-house in Pennsylvania. Three hundred sixteen were sent; ninety usuable forms were returned. The results were tabulated and the suggestions enumerated for subsequent inclusion.

The writer concluded that most of the competencies or objectives were reasonable and appropriate for the entire state. However, four competencies involving rote memorization were listed as optional because they were rejected by approximately fifty percent of the respondents.

Findings.--The direct results from this study were the development of a recommended course outline and a suggested guide for evaluation. Both listed competencies or objectives that were suggested by the respondents as being applicable to their business. All written in competencies or objectives, that were judged appropriate for state wide use, were incorporated in this study.

The recommended course outline and the suggested guide for evaluation both were divided into four parts listing competencies or objectives to acquire (1) prior to placement, (2) in slaughtering, (3) in meat cutting, and (4) in meat merchandising.

PAUL,PRODEEP K. Attitudes and Performance of Students with Varying Academic Abilities in High School Agriculture Curricula in Pennsylvania. Thesis, Ph.D., 1974. 145 p. Library, The Pennsylvania State University, University Park, Pennsylvania..

Purpose.--To ascertain relationships of high school students of varying academic profiles and their (1) attitudes toward school, (2) socioeconomic environment, and (3) achievement on prepared instructional material in agricultural subjects.

Methods.--One hundred seventy-eight students in 13 Pennsylvania high school departments of vocational agriculture constituted the total sample for this study. The 13 schools were part of 24 schools participating in the state funded project "Education in Agriculture for the Educationally Disadvantaged."

The instructional materials were quality milk production, basic electric wiring skills and nursery production. These three units, prepared by grauduate students for use in 1971-72 were taught again in 1972-73 when this study was made.

Academic profiles of the students were divided into three categories--below average, average, and above average--on the basis of objective and subjective ranking. The criteria for objective ranking were grade point average, reading ability, and class rank. The teacher of agriculture did the subjective ranking. Reading ability was measured by the Nelson-Denny Reading Test. Attitudes of students toward school were measured by the School Sentiment Index, an 83 item instrument. Achievement was measured by scores on multiple choice tests of the three specially prepared units.

Findings.--Students in this study in most part were from farm homes, their occupational objectives were in farming, and their father's occupation was in agriculture/agribusiness. Most students were from counties which had lost people due to population changes, the median family income was low, there was a loss in numbers of 10-19 year old youth due to migration and the school dropout rate and youth unemployment rate were high.

The mean total score on the Nelson-Denny Reading Test was significantly higher for students from farm homes (55.8) than from nonfarm homes (46.6) or urban homes (40.9). Correlation between the Nelson-Denny Reading Test and achievement test score (.38) was significant at the .01 level.

There were no significant differences between groups on the School Sentiment Index. There was negative correlation, significant at the .01 level, between the School Sentiment Index and student grade level (-.33), and teacher's age (-.29).

On both the quality milk production and basic electricity unit tests, no significant differences were observed for students in the three academic profiles. In comparing achievement test scores, the students from farm homes scored higher (59.6%) than the nonfarm students (48.9%) or the urban students (53.1%).

The findings imply that, though socioeconomic environments influence negative attitudes and poor performances of students, this situation may be eased in part by providing instructional material which is at the student's level of reading and understanding. This latter implication is reinforced in that no significant differences were found between achievement scores of students of varying academic profiles.

PHIPPS, ROBERT F. Guidelines for Community Development in Quang Nam Province, South Viet-Nam. Paper, M.Ed., 1971. 55p. Library, The Pennsylvania State University, University Park. Pennsylvania.

Purpose.--To provide a grass roots description of the political and social structure of the Vietnamese inhabiting Quang Nam Province, and to suggest guidelines to assist the change agent in the development of his program.

American military involvement terminated in South Viet-Nam in 1973. It is anticipated that voluntary agencies will increase the number of community development teams and workers going to South Viet-Nam to assist in the reconstruction of its war torn areas.

Method.--The study is limited to a descriptive study of Quang Nam Province and the problems facing a change agent. The information presented in this study was collected by the author during his most recent stay in South Viet-Nam with the International Rescue Committee from November 1969 to December 1970.

Findings.--Five political divisions are present in South Viet-Nam, four of which affect the change agent. Two major religions are practiced by the natives of Quang Nam Province and each affect community development differently. Twenty guidelines are suggested to assist the change agent in establishing and developing projects with the peasants at the hamlet level. Suggestions for further study are included.

SAVILLE, JOHN K. Problems Associated with Incorporating Vocational Agriculture into the Area Vocational School. Master's Thesis, 1973. West Virginia University, Morgantown, West Virginia.

Purpose.--The purpose of this study was to identify the problems encountered when incorporating vocational agriculture into the area vocational schools.

Methods.--Data for this study were collected by questionnaires mailed to teachers and state supervisors of vocational education in forty-nine states. One state (Alaska) does not have vocational agriculture.

Of the 147 vo-ag teachers, state supervisors of vocational agriculture and state vocational directors who were mailed questionnaires, eighty-one (55.1 percent) returned completed questionnaires.

Findings.--The following conclusions were drawn from this study:

1. Vo-ag teachers were not consulted about the construction of the vo-ag facilities in the area vocational school to any extent.
2. Classrooms, shops and laboratories are designed and assigned to specific vo-ag use during the preliminary planning of the area vocational school.
3. Young agriculturists programs are provided in most area vocational schools with adult agriculturists and post-secondary programs are being provided to a lesser degree.
4. Scheduling of vo-ag classes was rated as a significant problem while length of classes was rated as an insignificant problem in scheduling.
5. The relocation of the vo-ag department to the area vocational school has little effect on student interest in vo-ag and FFA. However, movement of the vo-ag program to the area vocational school has a favorable effect on the student-learning process.
6. Transferring the vo-ag program to the area vocational school resulted in an increase in the vo-ag enrollment.
7. Transportation presented a problem to some degree when enrolling students in vo-ag in the area vocational school.
8. Students find it more difficult to participate in vo-ag and FFA activities due to bus scheduling.
9. Classrooms, shops and laboratories were satisfactorily completed and equipped by the opening of the school term.
10. Most area vocational schools have guidance counselors. It was indicated that counselors do not possess a full understanding of the agricultural program, but do present the vo-ag program in a slightly favorable manner.
11. High school principals support the vo-ag program in the area vocational school.
12. FFA was rated high (83.3 percent) as playing an important part in the continuous success of vocational agriculture.
13. Community support for the vocational agriculture program increased or remained the same after moving it to the area vocational school.
14. Production agriculture should be taught mostly in the regular high school.
15. Students can complete vocational agriculture in the area vocational school and still meet college entrance requirements.

SEAMAN, ALAN M. Guidelines For Developing An Improved Program of Agricultural Education and Extension in the Raiwind Area of Pakistan Based on an Analysis of the Nature and Extent of the Need in the Area. M.S. Thesis, 1974. Cornell University. 182 p. Agricultural and Occupational Education Division, Cornell University, Ithaca, N.Y.

Purpose.--The purpose of this study was to provide data for program development to improve the economic and social welfare of small farmers and others in the Raiwind area of Pakistan.

Method.--A preliminary occupational survey was completed for the 100 villages in the area which have congregations of the Church of Pakistan. A paired stratified random sample of 100 Christian farmers and 100 Muslim farmers was taken from thirty selected villages. These farmers were personally interviewed by the author assisted by village pastors. At two schools in the area questionnaires were administered to 731 middle and high school students to provide general data for all students and some special data for agriculture students and farmers' sons. Both farmer and student questionnaires were designed to be coded by the author and later processed by computer.

Findings.--The study indicated that more than half of the sample farmers had farms below subsistence size and nearly half of them were sharecroppers, especially among Christians. Most farmers had no formal schooling but many of them wanted their sons to go on to higher education. In both educational and vocational aspirations, students seemed to be rather unrealistic, most of them wanting to enter the white-collar professions. Agriculture students were especially critical of the academic bias in their courses. Among three dozen farm problems identified by sample farmers, the most commonly mentioned were water and fertilizer availability. Most of the farmers indicated that they received no help with their problems from outside sources.

In future studies with similar objectives that may be conducted, no major changes in methodology are indicated. Major changes are needed in the agriculture curriculum of the schools to make it more relevant to the needs of farm boys in the area, in regard to both course content and the quality and quantity of practical work included. There is an urgent need and ample scope for a church-related program of agricultural extension, both to supplement the present work of government and other agencies in the area and to introduce and subsidize high-cost projects such as the drilling of wells and the reclamation of saline land as funds become available.

VOUGHT, P. TIMOTHY. An Analysis of Occupational Titles and Competencies in Agricultural Machinery and Equipment Sales and Service Businesses in Somerset County. Paper, M.Ed., 1973. 79 p. Library, The Pennsylvania State University, University Park, Pennsylvania.

Purpose.--(1) To identify, rate and cluster groups of competencies at the To Enter and To Advance levels for the occupational titles of mechanic, salesman, parts clerk, and foreman in agricultural machinery and equipment stores; (2) to determine residential background preferred for employees; (3) to determine educational background preferred for employees; and (4) to determine in-service education used for new and old employees. The development of new and more complex agricultural machinery and equipment has created a need for better training of new and old employees of agricultural machinery and equipment businesses.

Method.--A survey schedule was developed to determine the level of competence needed in agricultural machinery and equipment businesses for entering and advancing employees. Business and mechanical skills used in the survey were characteristic of those needed in agricultural machinery and equipment businesses. Interviews were personally conducted by the investigator. Four agricultural machinery and equipment sales and service businesses surveyed in Somerset County, randomly selected, provided the information needed for this study.

Findings.--Competence cluster areas chosen were meaningful in the operation of an agricultural machinery and equipment sales and service business.

Occupational advancement in agricultural machinery and equipment sales and service requires additional training in agricultural mechanics and business competencies.

Knowledge of the cluster areas rated high by the interviewees would be important in the development of teaching materials and occupational training programs in the high school and post high school years.

WENDT, FELIX SCHLUTER. A Strategy for the Development of Pre-Tertiary Level Agricultural Education in Western Samoa. Dissertation, Ph.D., 1974, Cornell University. 221 p. Library, Cornell University, Ithaca, N.Y.

Purpose.--Western Samoa, a small developing country in the South Pacific, is primarily dependent on agriculture for its social and economic well-being. There is urgent need to develop programs of education and training in agriculture, especially for youth of high school age and for adults active in agriculture. The major purpose of the study was to determine the nature of such agricultural education and to develop a plan for its organization.

Method.--In the development of a system of agricultural education, the basic decisions to be resolved are those related to the issues of: purpose, clientele, types of programs, program objectives and curricula, practical experience training, teacher training, and national policy. Four principle procedures were used to obtain the necessary data and information for decision making: (a) a comprehensive examination of agricultural education in several selected countries was undertaken to identify the main alternative solutions to each decision and the factors to be considered in planning a program of agricultural education in a developing country; (b) the assistance of a panel of six members, representing the power-structure (executive level decision-makers) in Western Samoa was solicited to identify those factors which they considered relevant to the planning of a program of the country; (c) a review of pertinent official reports and documents in Western Samoa; and (d) interviewing selected respondents, i.e., 225 educators; 25 church ministers; 17 representatives of business, private organizations, and the National Women's Council; 435 farmers; 1806 students in grade eight; 1226 students in grade ten; and 869 students in grades 11 and 12. Interview schedules were prepared, field tested, revised, and administered to the respective respondents.

In general, the data collected related to; the importance of agriculture in the social and economic life of the country, goals and priorities of national development plans, the employment situation, the school system, numbers and placement of school leavers, the age youth started full time farming, income from agriculture, attitudes toward agricultural education, the available agricultural services, distribution and concentration of the agricultural population, the principal agricultural enterprises, the farming calendar, education legislation, costs of programs, and the avilability of resources.

Findings.--The findings of the study indicated that in the development of agricultural education in Western Samoa the following should be emphasized: (a) occupational training in agriculture -- the development of competencies in the kinds of knowledges, abilities, and skills that would better a person for a life of productive activity; (b) a clientele comprised of youth, both in and out of school, over 13 years of age, and adults active in agriculture; (c)

offering occupational education in agriculture at the junior high schools -- both in-school (formal) programs in grades eight through ten, and out-of-schools (non-formal) programs for out-of-school youth and adults; (d) programs objectives and curricula based on occupational training in agriculture; the specific knowledges, abilities, and skills identified by the community as being necessary for a life of productive activity in Western Samoa; and the clientele identified earlier; (e) practical experience training that centered on supervised experience at the student's home farm and/or on the school farm; (f) the training of graduates of the agricultural college to be teachers of agriculture; and (g) national policy which includes specific legislation on agricultural education, provides adequate resources, establishes a national coordinating body for agricultural education to bring together specialists in agriculture and education under the minister for education, and authorizes the training of teachers and curriculum development.

WEST, WILLIAM C. The Need for Agricultural Mechanics Workshops as Perceived by West Virginia Vocational Agriculture Teachers. Master's Thesis, 1975, West Virginia University, Morgantown, West Virginia.

Purpose.--The object of this study was to determine the need for agricultural mechanics training as perceived by West Virginia vocational agriculture teachers; to ascertain preferences concerning place, time, credit, and length of workshops; and to determine if preservice or inservice workshops influence training needs in agricultural mechanics.

Methods.--The data were obtained through questionnaires mailed to all West Virginia vocational agriculture teachers and student records at West Virginia University.

Findings.--The findings were as follows: (1) vocational agriculture teachers of West Virginia desire training in 41 shop skills out of 44, (2) training needs of teachers vary among vocational agriculture districts, (3) greatest training needs are in agricultural power skills, (4) approximately 65 percent of the vocational agriculture teachers prefer inservice training to be conducted in their local vocational agriculture districts, (5) nearly 64 percent of the teachers desire college credit for inservice training in agricultural mechanics, (6) teachers of vocational agriculture prefer the month of July for inservice training, (7) teachers prefer one week inservice workshops, (8) agricultural mechanics needs are neither changed nor lowered significantly with teaching experience but needs are reduced when certain preservice courses are taken.

It was concluded that inservice agricultural mechanics training should be offered with credit during the month of July for a one week period.

STUDIES IN PROGRESS

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BAIL, JOE P. A Fact Pack on Agricultural Education in New York State. Staff Study, Agricultural and Occupational Education Division, Cornell University, Ithaca, N.Y.

BAIL, JOE P. and CUSHMAN, HAROLD R. Procedural Models for Organizing and Conducting Occupational Adult Education. Staff Study. Agricultural and Occupational Education Division, Cornell University, Ithaca, N.Y.

BIRCHLER, AUGUST J. Evaluation of an Occupational Skills Record Book Based on a Survey of Students and Teachers of Agriculture in Pennsylvania High Schools. M.Ed. research, The Pennsylvania State University.

CARLOW, WAYNE. Teaching Home Horticulture to Adults Through a College Continuing Education Division. M.A. research, University of Rhode Island, Kingston, R.I.

CUSHMAN, HAROLD R. and TOM, FREDERICK K.T. A Diagnostic Observation and Reporting System for Student Description of College Teaching. Staff Study. Agricultural and Occupational Education Division, Cornell University, Ithaca, N.Y.

DELL, LAWRENCE E. Development of Color Slides and Text on Pruning Dwarf Apple and Pear Trees on Home Grounds. M.Ed. research, The Pennsylvania State University.

ERWAY, JESSE R. Employment Summary of 1970-73 Graduates of High School Ornamental Horticulture Programs in Pennsylvania. M.Ed. research, The Pennsylvania State University.

HENRY, ARBA L. Development of an Agricultural Careers Game. M.Ed. research, The Pennsylvania State University.

JOHNSON, WINSLOW G. A Study of the Attitudes of Teachers, Employers, and Former Students Relative to Concepts of Ornamental Horticulture Taught in the Thompson School of Applied Science, University of New Hampshire and the Stockbridge School of Agriculture, University of Massachusetts and the Collegiate Program at Essex Agricultural and Technical Institute. College of Life Sciences and Agriculture, University of New Hampshire, Durham, New Hampshire.

LAMB, STUART D. Economic Information Needs of Young Farmer Couples in Pennsylvania and the Role of Farmer Cooperatives in Meeting the Needs. M.Ed. research, The Pennsylvania State University.

LARMIE, WALTER. Application of Mediated Self-Instruction Programs for Use with Extension Adult Audiences. M.A. research, University of Rhode Island, Kingston, R.I.

LAWSON, REBECCA K. Review and Annotation of Occupational Guidance Films for Agriculture. M.Ed. research, The Pennsylvania State University.

LINN, BERNARD C., Jr. An Analysis of the Application of Conservation Plans in the Centre County Soil Conservation District. M.Ed. research, The Pennsylvania State University, Pennsylvania.

MANNEBACH, ALFRED J. A Survey of Employment Opportunities and Community Resources Having Implications for Programs of Vocational agriculture in Connecticut: Phase II, Staff Study. Department of Higher, Technical, and Adult Education, University of Connecticut, Storrs, Conn.

MARRON, THOMAS. Initiating & Establishing Outdoor Education in Grades Five & Six. M.A. research, University of Rhode Island, Kingston, R.I.

RAGOSTA, Stephen W. Opinions and Attitudes of State FFA Officers toward Selected FFA Issues and Changes. M.Ed. research, The Pennsylvania State University.

ROBERTS, HERBERT. Dairy Herd Analysis Utilizing the Computer to Derive Selected Matings. M.A. reaearch, University of Rhode Island, Kingston, R.I.

SHEAFFER, JAMES A. Approved Competencies for Entry Level Employment in Aboriculturally Related Occupations. Thesis, Ed. D. Department of Vocational-Technical Education, Rutgers University, New Jersey.

SOPP, DENNIS F. An Evaluation of Sets of alternative Complementary Instructional Techniques for the Identification of Woody Ornamental Plants. M.Ed. research, The Pennsylvania State University.

STEVENS, GLENN Z. and NORMAN K. HOOVER. Cooperative Vocational Education for Positions in Agriculture/Agribusiness and Natural Resources. Staff study, AES Project 2154, The Pennsylvania State University.

STINSON, RICHARD F., and others. Development of a Job Opportunity Based Planning Model for High School Vocational Agriculture Programs. Staff study, RCU Project 19-4004, The Pennsylvania State University.

THOMAS, J. RICHARD. Development of a Cooperative Education Program in Lancaster Mennonite High Sshool. M.Ed. research, The Pennsylvania State University.

WILLIAMS, EDWIN P. Identification of Teacher Needs for Instructional Materials in Selected Teaching Areas. Thesis, M.S. Agricultural and Occupational Education Division, Cornell University, Ithaca, N.Y.